DOCUMENT RESUME

ED 244 128 CE 038 965

TITLE	Growing Wheat. People on the Farm.
INSTITUTION	Department of Agriculture, Washington, DC. Office of Governmental and Public Affairs.
PUB DATE	Oct 80
NOTE	25p.; For related documents, see CE 038 960-969.
AVAILABLE FROM	Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.
PUB TYPE	Guides - Classroom Use - Materials (For Learner) (051)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Agricultural Education; Agricultural Production; Agronomy; Business Skills; Career Choice; *Career Education; Economics; Farm Accounts; *Farmers; *Farm Management; Farm Occupations; *Field Crops; Government Role; Harvesting; Horticulture; Interdisciplinary Approach; Job Skills; Learning Activities; *Life Style; *Occupational Information; Rural Youth; Secondary Education; Technological Advancement; Vocational Education
IDENTIFIERS	Wheat

ABSTRACT

This booklet, one in a series about life on modern farms, describes the daily life of the Don Riffel family, wheat farmers in Kansas. Beginning with early morning, the booklet traces the family's activities through a typical harvesting day in July, while explaining how a wheat farm is run. The booklet also briefly describes the wheat growing operation of Stan Timmermann of Oregon and the wheat harvesting business of Buster Finneman of North Dakota. Although the booklet focuses on wheat farming, it includes discussion of major topics that are common to all of the booklets: (1) farming as a business, (2) the impact of technology on farming, (3) the increasing specialization in farming, (4) the role of government in agriculture, (5) the diversity in farming, (6) the interdependence between agriculture and the rest of the economy, and (7) the way of life of farmers and their families. The booklet is illustrated with black and white photographs. (KC)

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PEOPLE ON THE FARM:
GROWING WHEAT

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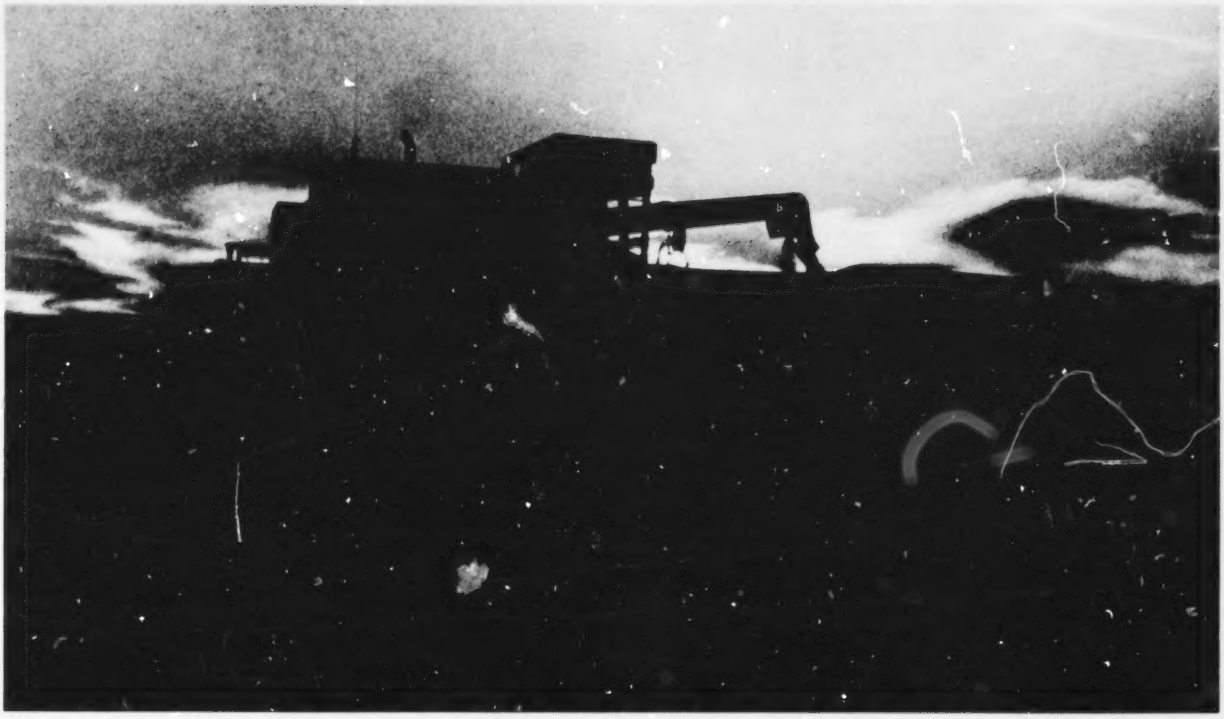

Wheat harvesting continues long after sunset in the Wheat Belt, weather permitting. The day begins at 5:30 a.m. with the preparation and repair of machinery. As soon as dew or the previous day's rain dries off the grain, usually in mid-morning, the combine drivers start harvesting, often continuing until midnight or 1 a.m.

PEOPLE ON THE FARM:

GROWING WHEAT

Hot dry Fourth of July air hung captive between the rolling hills of north-central Kansas and a sky that arched like an enormous blue bowl above Don Riffel and his sons. Wheat stalks still wet from yesterday's rainstorm would be dry enough by 1:30 that afternoon to snap easily on the cutter bars of the combines.

A year earlier, the Riffels had finished harvesting wheat by July 4. They had gone water skiing on a nearby lake. But in 1979, on their first day of harvesting, July 3, a thunderstorm had stopped the three-man operation after only 3 hours of cutting. That day, too, had begun with a splendid blue bowl overhead. Then some white cottony clouds had appeared, followed almost as suddenly by darker gray ones. Finally the whole sky was painted various shades of gray. Ominous black, rolling thunderheads appeared on the horizon.

It rained, just as the weather forecaster said it would. And the first day's harvesting stopped.

The Riffels would try again today. But while they waited for the wheat to dry, they decided to do some terracing.

By 10 o'clock in the morning, Don Riffel, 55, and his son, Randy, 20, had finished carving into ridges the soil on the side of a nearby hill by going over it with a special terracing machine. The ridges would slow the runoff of good topsoil when it rained.

"Farming," Don called this terracing—as if harvesting were not.

Back in the barnyard, meanwhile, Don's other son, Steve, 23, was trying to pull a broken sprocket off the back of a hay stacking machine. A graduate of Kansas State University, Steve normally would be cutting hay or stacking it while waiting for the wheat to dry. But today, the hay was still too green to be cut.

Steve spent 2 hours trying to pull off the sprocket because a holding pin had broken. Finally, he and his dad decided to cut the sprocket off with a torch. They'd buy a new one for $18.

Nearby, Don's wife, Clara Mae, "farmed" her 40- by 100-foot garden, harvesting three pailfuls of green beans and some broccoli.

Don and Clara Mae had been

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invited to spend the afternoon of the Fourth by the swimming pool of friends in Stockton, 9 miles southwest of their home. There would be little opportunity to loll around by a swimming pool today, Clara Mae thought. Harvesting could last until 10 o'clock at night. Besides, the weather forecast again was for late afternoon thunderstorms.

The need to harvest grew more imperative each day on the Riffel farm. Yet the wheat remained green and difficult to cut.

Weather had been a problem. Winter overstayed its welcome. Spring was too wet. The wheat, which had escaped at least 10 different kinds of known disasters (such as bugs, fungi, and winterkill) since being planted in September just hadn't grown fast enough and dried out fast enough for the Riffels to start combining. It takes the Riffels 10 days to harvest about 900 acres of wheat with two combines, weather permitting.

If the Riffels were the worrying kind, there was plenty to wrinkle their brows. The hailstorm season was already beginning. Every day it became more likely that hail would destroy part or all of their crop. Don had taken out hail insurance in 1979 for the first time in 20 years—just in case. That would repay him the cost of growing the wheat if hail destroyed his crop.

At the same time, the price of wheat was falling. The price offered farmers on July 3 had fallen 16 cents from the previous day. At $3.80 a bushel, however, it was up 30 percent from the year before.

Then there was the rented combine. Deep inside its maw it had perversely snapped a clutch the day before. Would the implement dealer in Stockton be open to fix it on the Fourth of July?

To top it all off, the wheat still wasn't ready to harvest at 10:30 a.m. even though the temperature was 90° according to the radio. The day before, it had reached 105° before the storm.

"There's no use worrying about it," Don said. "You just wait until the weather's right, and then harvest."

What about the 16-cent drop in the price of wheat yesterday? "I didn't lose money," he said, "because I never really had it."

Today Don decided he would attempt to harvest the field he had planted earliest in September. It was on high ground and most likely to be dry.

Before lunch, the farmyard behind the Riffel home came to life with the purposeful, noisy movement of machinery. Don directed the movement like a quietly confident army sergeant whose vehicle operators needed neither shouts nor wild arm waving to get the job done.

The Riffels switched to harvesting their own wheat in 1974 after years of having contractors cut it.

"You could never be sure they (the contractors) would be there when the wheat was just right to be cut," Don said.

Don reasoned then that it was cheaper to rent a second combine at $24 a working hour rather than to buy two machines, since they would be used less than 2 weeks a year.

In 1979, the basic charge of contractors in the Riffel neighborhood was $10 an acre to cut the wheat. In addition, they charged 10 cents a bushel for any yields of more than 20 bushels to the acre. Also the contractor charged 10 cents a bushel to haul wheat to the elevator in town, up to 10 miles—more for greater distances.

Just before lunch, Steve helped his father and Randy fill vehicles with diesel fuel and gasoline, two grain trucks, a tractor to be borrowed by a neighbor, a tank in the bed of a pickup, and the pickup itself. The Riffels' own combine would be refueled in the field from the tank on the pickup. It had been left in the field yesterday.

This spring Don had no trouble keeping diesel fuel in his two storage tanks, which hold a total of 3,500 gallons, though the price had shot up from 44 cents the previous year to 61 cents in June. Don buys 12,000 gallons a year.

Don is concerned enough about fuel to consider creating his own supply by building a still. It would produce alcohol from crops that he grows on his farm.

LUNCHTIME

About then, Clara Mae called to announce that lunch was ready. She used the family's citizen band radio, reaching Don in his pickup truck from the home station in the kitchen.

Harvest time means extra work for farm women, as well as the men. Late meals, either at home or in the field, become commonplace. Clara Mae Riffel occupied her mind with thoughts of vacation traveling to follow.

Their home is bright and cheerfully painted, with all the modern appliances. Don and Clara Mae built it over the years as cash became available for materials. With a kitchen-family room 42 feet long, three bedrooms, and a living room, the home is a far cry from the small one they started with in 1952, the year they were married.

At lunch, the results of Clara Mae's morning efforts were in evidence on the table: swiss steak, boiled potatoes, mushroom gravy, fresh broccoli, string beans prepared according to a recipe from Gourmet magazine, iced tea, and fresh strawberries. Clara Mae likes to cook. And as long as the wheat was not yet dry enough to harvest today, there was time for the family to talk.

In the days ahead, as the harvesting gained momentum, Clara Mae knew she would be making hot lunches or sandwiches and delivering them right out to the field. At one recent harvest, her daughter-in-law, married to their other son, Lawrence, a physician in Iowa, said she was horrified at the amount of food that Clara Mae prepared for the harvesters.

Clara Mae, who is 48, said she doesn't get involved directly in the farm work. "I don't know how to run a tractor or a combine," she says. "If anything happened to him (Don), I'd be lost."

For years, the Riffels hired a man to help with farmwork—until the boys grew up. Now, Clara Mae says, "you can't hire help as good as these boys." And the hired man is no longer needed.

The boys, for their part, have devoted their lives to farming.

As lunch progressed, Don said, "A few years ago, the farm situation started getting serious. Inflation was coming in. Land became quite valuable. I seriously considered giving up farming. I could have sold the farm and put my money in certificates of deposit.

"I told the boys if there was something else they wanted to do, they'd better go do it and see how they like it. But if they wanted to come back here after college and farm, that would be fine. But there was no way they could do it without my help."

Steve and Randy decided to farm. Lawrence headed for medical school.

"When I got out of college, dad and I set up a partnership," Steve said. "You can't go into farming on your own. The only way I can get in is to gradually take over from dad.

"There's just the two of us in the partnership so far. Randy works for us. He's still in school."

Together, they harvested nearly 1,500 tons of wheat in 1979. They are the Riffels of Stockton, Kansas. From left to right at their harvest-time late dinner are: Randy, 20, his mother, Clara Mae, 48, Steve, 23, and his father, Don, 55. Before the advent of modern combines, it would take a small army of workers, sweating, lifting, driving and cooking to bring in such a harvest.

Their father gave Steve Riffel, left, and Randy, his brother, an opportunity to get out of farming, but Steve, a graduate of Kansas State University, and Randy, a student at the same institution, chose farming. Their brother, Lawrence, chose the medical profession. Steve has a pilot's license. He and Randy water ski, fish, and swim on nearby reservoirs and lakes.

INDEPENDENCE

One reason Steve wants to farm is the independence that farmers maintain. Yet there are disadvantages to total independence, Don said.

"One of the stupidest things farmers have done is this: They do all this work to harvest wheat and then ask, 'How much will you give me for it?' And go to the implement dealer and say, 'How much do you want for this tractor?'

"They've got to get together and say, 'This is what we want for our wheat,' and 'This is what we'll pay for the tractors.'

"But they never will."

Don figures it cost him $104 an acre to grow wheat in 1979—most of that in the value of the land.

"If we sell wheat at $3 a bushel, we come up short if we have a 37-bushel (per acre) yield," he said. That's his average yield per acre.

When Don figures the value of using his land, he bases that cost on what it cost him to buy the land—not what it is worth today. Land that Don bought at $160 an acre in 1972 was selling for $500 an acre in 1979. If Don figured his cost of production on inflated land values, he figures he'd be losing money. And that's the position a farmer would be in if he had *bought* the land in 1979.

Looking at that another way, Don said he is making a living by eating up his capital investment.

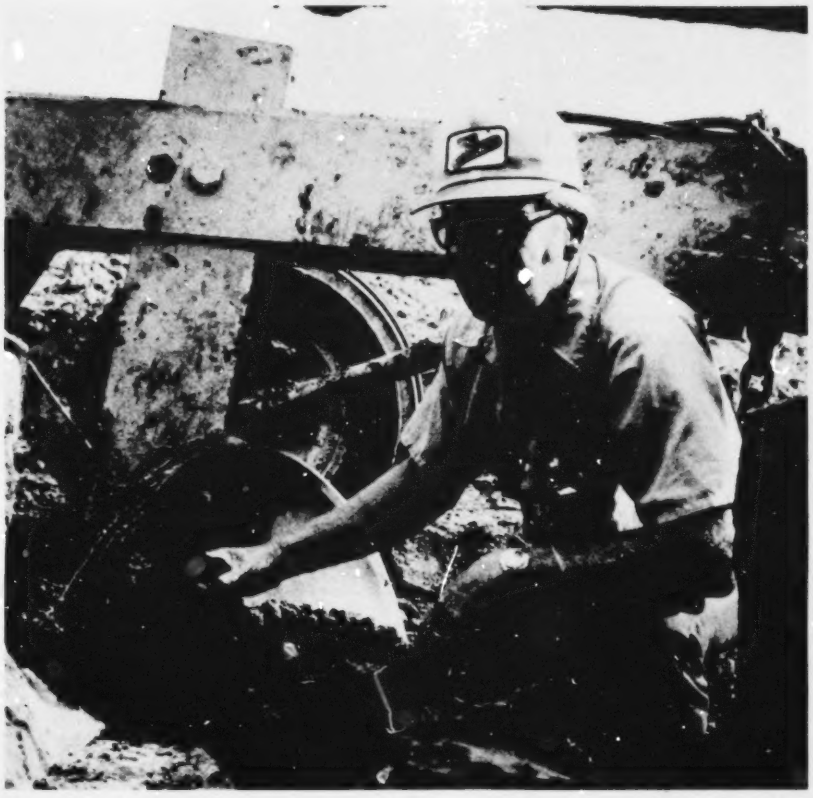
It has never been very easy. The first 15 years of Don and Clara Mae's marriage, they truck-hauled every drop of water that they drank. There was no underground water on their land.

When 28 farmers in the area did get together and formed a rural water district to distribute water from a well in nearby Woodston, Don was elected to the district board and worked so hard, Clara Mae recalls, that "he might as well have dug all 78 miles of pipeline himself—by hand."

"Still, this is the greatest place to raise a family," she added. "It's too bad everybody can't. The boys grow up with men. A lot of city kids never see their dad . . . they're raised by women.

"These kids know how to work. And we do a lot of things together. We have Christmas parties where Don and I invite our friends and the kids invite theirs."

Though their lives have revolved about their children—Don was on the school board and they were both in 4-H work for 16 years—Clara Mae



Examining a terracer, an implement which helps him shape hillsides to control water runoff, Don Riffel realized he has only 12 miles of terraces yet to build to complete the work begun by his father 50 years ago. Such efforts help conserve the soil for the future.

asserts that she is "not a dedicated do-gooder." As if to confirm that, she admitted that "I thought I was being let out of jail when the boys outgrew 4-H."

As she worked on a maternity dress for her daughter-in-law—the only girl in the family—Clara Mae added:

"My worry is, where am I going to get more daughters-in-law? There is nothing to bring girls back to the farms. There are no jobs for them (off the farm). They are either teachers or in agriculture."

Steve smiled and said he was in no hurry.

Clara Mae had another concern.

"We've lived well off this farm," she said, "but it is not big enough to support three families. If Randy comes back (from the university), the farm will need more land."

Already worth nearly $850,000 and managing a $3 million operation, Don said he was going out the next day to look at some land—another 320 acres. That is, when he wasn't harvesting.

"It's a good life but it's getting complicated," Don said. "It takes half my time just purchasing and managing. Oh, I help the boys with the cattle and run some machinery."

The Riffels have many friends in town—lawyers, bankers, and doctors among them. Together, they like to go to dances, water ski, picnic, and play bridge. Don and Clara Mae, both of whom attended Kansas State University, entertain and are entertained a lot. They've met many other friends while traveling in Europe, South America, and Hawaii. Those much-anticipated trips always come in January, when weather is so cold that it permits only the feeding and watering of cattle on the farm—chores easily performed by the boys.

BACK TO WORK

As their holiday lunch ended at 1:15 p.m., Clara Mae armed the three men with jugs of ice water and the trio walked out of their airconditioned home into 95° temperatures.

"Man, there needs to be some air moving, don't there?" Steve commented quietly. It was his job now to drive the rented combine into Stockton for repairs. The dealer was open.

Don took special care to wipe off all the windshields of the various vehicles. He said he'd taken too many people out of smashed pickups. A low sun angle will blind a driver on narrow country roads and accidents occur. Just 5 years earlier, while driving down the

road in front of his home, Don had come upon two pickups that had just collided head on. Both drivers were dead. One was Don's good friend.

Riffel machinery formed a kind of Fourth of July parade out the long driveway and then west on the dry dirt road to Stockton. Steve led the way in a combine, Don followed in the pickup, and Randy drove a grain truck. Atop the hill where Don would start combining, Steve left the parade for town.

There on the hill, Don had a magnificent view of the plains that spread out to the edges of the sky. Here, about 30 miles southwest of the geographical center of the continental United States, Don's grandfather had settled in 1913, buying one section of land—640 acres. He'd had heart trouble. Plowing the virgin plains of Nebraska earlier had nearly killed him.

Don's father eventually took over the section, adding 80 acres in the 1940's and another section in the 1950's before retiring in 1970. Don and his father grew wheat together for several years before Don's father died in 1976. Don bought the first of his own land in 1943 with money he earned working for an earth-moving contractor.

Altogether, the Riffels work 4,042 acres. Don and Clara Mae own 1,760 of that and lease the rest from various owners, including his mother (320 acres).

Of those 4,000-plus acres, the Riffels can plant crops on only 2,639 acres. The rest is too steep or wooded or otherwise unsuitable for plowing. The Riffels raise cattle on those scattered untillable acres. Don could see some of those cattle now on a hillside near the field he would start harvesting.

Not only do the cattle help the family make good use of its land, but they provide an alternate source of income when the wheat crop is poor or when prices are low. They also keep Don and his sons busy when they aren't working in the fields.

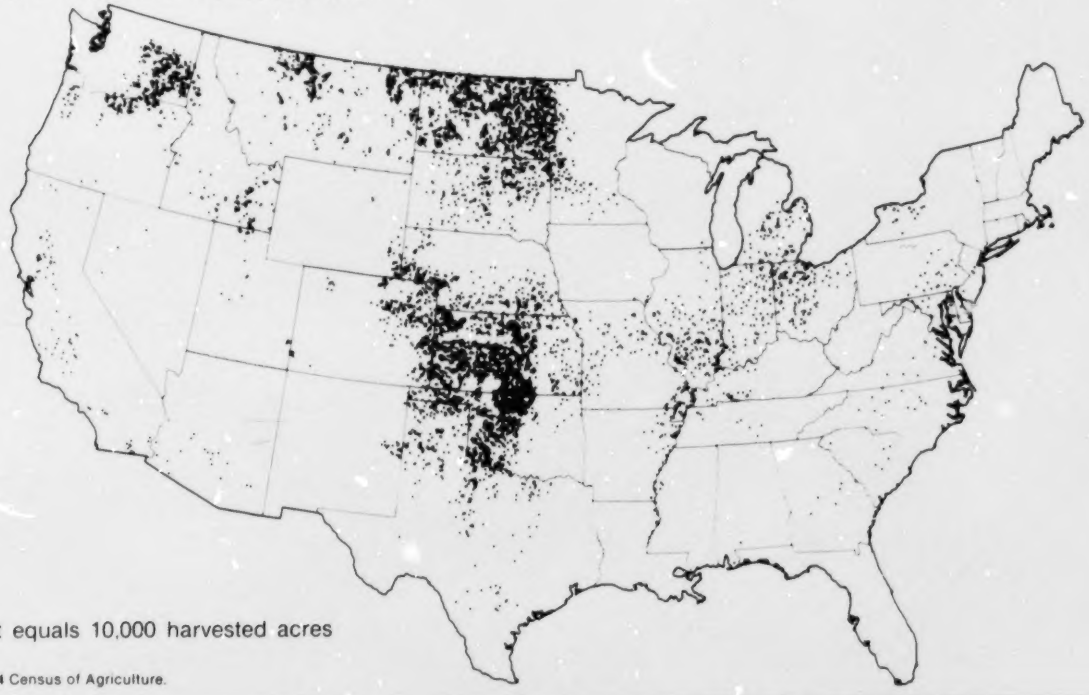
In 1978, the Riffels made almost as much money selling beef cattle as they did selling crops. They kept 150 cows and sold their calves to feedlots after a few months of grazing them on grass.

Don said his big mistake in 1978 was not borrowing a million dollars to buy feeder cattle to sell at high prices that came along later. (Would somebody lend Don Riffel a million dollars? Yes.)

In 1979, Don and his sons planted 918 acres to wheat, and another 400 acres to sorghum (a plant that looks like corn with grain on top that is used all over the world to feed livestock).

That's a lot more wheat than most American farmers plant but less than some. A quarter of all American farmers grew some wheat in 1974. The

WHERE WHEAT IS GROWN



One dot equals 10,000 harvested acres

Source: 1974 Census of Agriculture.

number of acres on which they grow wheat varies from year to year, but in 1974, some 62,957,215 acres were devoted to wheat growing. That year, a farmer who grew any wheat at all grew it on an average of 118 acres.

"BREAD BASKET"

In Kansas, where they grow more wheat than in any other State, an average wheat farmer devotes 1 square mile of land to the crop—640 acres.

The Great Plains is the bread basket of the world. Farmers grow more wheat on that plateau, which gradually slopes upward from the Mississippi River to mile-high Denver, than in any other place on earth.

The Riffels are 1,960 feet above sea level. The land is etched by ravines carved out over thousands of years by water running off the clayey soil after thunderstorms and snow melts beyond reckoning.

Just south of Stockton there are hill-sized outcroppings of rocks, where it is easy to imagine earlier plainsmen astride their horses watching waves of bison run through the tall grasses. Now busily nodding oil pumps that look like huge grasshoppers have replaced the Indians. The native grasses have been supplanted by wheat and grain sorghum, the bison by beef cattle.

Here you can see thunderstorms conjured up out of thin air on hot afternoons, watch walls of rain drop like stage curtains across the skies. There are times in the spring when winds howl out of the Rockies to the West so hard it can rip young wheat plants right out of the ground and, in dry years, swirl dust clouds off the surface of unplanted land and fling them 3 miles into the sky.

A full third of the Riffels' tillable acreage is out of production every year—soaking up water. It's in summer fallow.

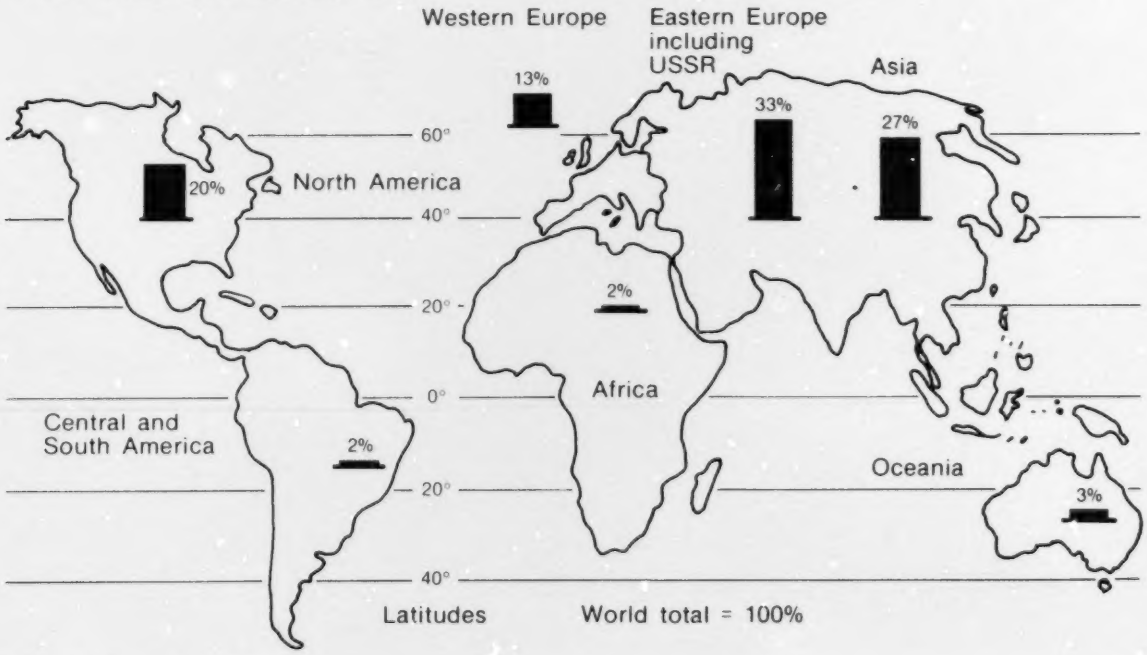
Don held 918 acres in summer fallow in 1979, an acreage just equal to the amount he planted to wheat.

Summer fallow does not mean a farmer just leaves it alone and lets weeds grow in it. Far from that, the farmer starts working on that land soon after harvesting his wheat.

Soon after harvest, the Riffels go through the fields with an implement that slices just beneath the surface, cutting off the roots of weeds but leaving the wheat stubble ("trash") intact on top of the soil. The trash will help hold the soil against wind and water erosion.

Next, they apply a herbicide to the soil. You can't store water in soil while weeds soak it up. Then Don and his sons will fertilize the fields to prepare the land for its next crop.

World Wheat Production, 1977



Source: U.S. Department of Agriculture.

Randy Riffel watched as his dad, Don, emptied a combine's bin of wheat into the truck Randy would drive into Stockton. Don keeps the doors and windows of the harvester shut to keep out dirt and dust, but the cab of the recent-model machine is air-conditioned. Randy has hay fever and often has to wear a mask at harvest time.

In the spring, after a rainy fall and hopefully a good winter's snowfall, they will till the fallow soil, that is, open it up a little to soak up spring rains and keep the weeds at bay.

Then they will either plant it to grain sorghum or keep it idle until September when they will plant it to wheat.

So summer fallow means a lot of work for the farmer. But in dry lands, say, where it rains 12 to 14 inches a year, farther west from the Riffels, summer fallow is an essential practice. The Riffels get an *average* of 21.5 inches of precipitation a year.

Don can see the day, though, when farmers in his area won't be able to "afford" summer fallow. With land prices so high—relative to the value of the crop that is grown on it—Don says the owner can't let half of his or her land lie idle every year. He points out that one of the reasons for summer fallow is that farmers once couldn't get the harvested land plowed in time for a September planting the same year. Nowadays, with bigger and faster machinery, he says, farmers can till their land in the months between June harvest and September planting.

What about the need for fallow to soak up water?

Don says a farmer loses a lot of water to evaporation when he opens up the summer fallow land. He says he could use that water more effectively by planting a crop on it.

There'll be some years when there won't be enough water in the soil to forego the summer fallow, Don says. The Weather Service keeps track of the soil moisture content and reports it periodically to the farmers. In especially dry years, there would be no "extra" crop planted.

FLUFFY CLOUDS

There seemed little likelihood of rain on Riffel land at 1:15 p.m. on Independence Day, 1979. Only a few white fluffy clouds had been added to the blue firmament.

Don turned to the combine he'd left in the field the day before. The machine had cost Don $21,317 in 1977. The equivalent machine in 1979 would have cost $55,000. After Don fueled the air-conditioned combine with 25 gallons—enough for the rest of the day—he maneuvered the clumsy machine across a dirt road into the hilltop field and started cutting wheat.

The stalks were cut off at a height of about 18 inches by whirling sweeps that look like the business end of an overgrown reel-type lawnmower. Cut stalks were then pulled up into the maw of the

An approaching thunderstorm captured Randy Riffel's attention as he leveled off the wheat his father, Don, unloaded into the truck. Moments later, Randy pulled a tarpaulin over the grain and headed for town. About this time, a hail storm struck just north of the Riffel land and damaged a neighbor's crop before it could be harvested.

machine, grain and all. Inside, the grain was mechanically rubbed away from the stalk and separated. The grain fell into a storage bin in the combine while the stalks (now straw) were blown out the back of the machine. Cutting along the contour of the terrace Don filled the combine's bin in a half-hour and guided the machine over to the truck Randy had driven into the field. Don swung alongside the truck and disgorged the golden grain from the combine through an unloading tube.

The length of time it takes to fill a combine's bin depends on the number of bushels per acre a field has produced. And that depends on how many plants are growing per acre plus the length of the heads of grain. A day earlier, the Riffels harvested 60 bushels to the acre. They considered it a really good wheat crop for that reason. In addition, there was little dust, very little rust (a fungus disease), and very little mosaic (a virus disease).

As he unloaded the grain, Don said "I think it's dry enough. I'm going to stay with it."

Rustling dryly in the breezes and standing waist high to a tall man, the wheat on top of the hill was indeed ready to be combined. The kernels were so hard they threatened to break the teeth of any human testing for hardness.

But clouds were already spreading big gray areas over the sky.

STORM CLOUDS

At 2:30, Randy noticed that even thunderheads were building up. A breeze from the north had turned into a wind. In just 15 more minutes, the blue bowl was gone, replaced by a light and dark gray mottled umbrella.

Still, metal on the truck was too hot to touch. The ice water, however, remained cold enough to hurt teeth.

At 3:08 the Riffels heard the afternoon's first thunder clap, just as Don drove to the truck to unload another binful. As Randy shoveled the grain around to make room for the next unloading, the whole northern half of the sky above him grew black. Yet Randy still thought the storm was going around them. He even said, "For once I think we lucked out."

But at 3:40, the clouds in the west grew blacker. The wind grew stronger as Don unloaded half a bin at the first truck, then drove to a second truck to unload the rest.

Randy drove the first truckload into town, leaving Don to finish filling the second truck

with second and third binfuls.

In Stockton, sometimes the line of trucks at the elevator is three blocks long. The elevator belongs to the Farmers Union Mercantile and Shipping Association of Stockton and Woodston. Randy found only six trucks in line on the Fourth of July. The trucks were parked in the middle of the highway on both sides of the entrance. Cars moved past on both sides of the line. After 9 years, Albert Haines was still acting as traffic cop at the elevator entrance, directing the trucks over the scales in the order in which they appeared in line.

The cooperative, whose name Don would like to shorten because, as its secretary, he has to write it so often, is owned by farmers. It buys wheat from its farmer owners, stores 606,000 bushels of it at a time, sells it at the best price possible, and ships it out to larger, terminal elevators. If it makes any money in its operation, the cooperative divides it with the farmer owners, usually at the end of the year.

Most of the wheat stored briefly at Stockton is loaded into big hopper cars and sent by rail to huge terminal elevators at Kansas City, Atchison, or Topeka. Half of it is sent from those terminals to the Gulf of Mexico and then shipped overseas. Nearly two-thirds of the wheat grown by American farmers is shipped out of the country.

As Randy drove his truck onto the scales at the entrance to the Stockton elevator, Haines inserted a tube into the truck's wheat and withdrew a sample to be tested in an office next to the scales. Jan Stoutimore, the manager's daughter, found the sample had 12.5 percent moisture and that it weighed 60 pounds per bushel (just as the textbooks say it should). If it had contained more than 14 percent moisture, the cooperative would have deducted some money from the payment it made to the Riffels.

While waiting in line, Randy learned from a neighbor that it had hailed just north of the Riffel land that afternoon. That was close, thought Randy.

At 4:45, Farrel Stoutimore, manager of the cooperative, announced that the radio had just warned of the possibility of severe thunderstorms in the area.

Randy unloaded at the base of the 130-foot elevator. Mary Miller, weighing the truck loaded and later unloaded, found that Randy's truckload weighed 22,310 pounds and contained 371-1/2 bushels. A slip confirming this was handed Randy as he drove away. Black skies closed in around Randy as he drove down the highway. It was 5:10 p.m. when he pulled into

In Stockton, waiting in line to unload his truckful of wheat at the elevator of a farmer-owned cooperative, Randy Riffel chats with a neighbor, Verl Muir. Sometimes the lines on either side of the entrance to the elevator are three blocks long. Farmers who have waited 10 months for this, the pay-off time, are often grouchy in this final line-up.

the driveway of the farm—just as it started to rain hard.

Don had decided a half hour earlier that there would be no more harvesting today. He covered the wheat in the truck with a tarpaulin and drove the pickup home.

In 5 minutes, the full fury of the storm struck. The rain was blinding. The dirt roads turned shiny, then slick with mud under the onslaught. Water flooded the low spots.

Inside their home now, Don and Clara Mae prepared to visit the friends who had invited them over for the holiday.

Ninety miles southeast of Stockton, at Salina, people saw tornadoes that evening. But there was no hail at Stockton.

In a few days, the Riffels were harvesting again. But it would take them until the last week in July to finish their wheat harvest in 1979. The quality of the grain had deteriorated to some extent, but the yields held up. The average yield on the 918 harvested acres was 53.6 bushels—best the Riffels ever had on that many acres.

Before the year ended, diesel fuel was selling for 84 cents a gallon in Kansas.

DON AND CLARA MAE'S INCOME, EXPENSES 1978

INCOME

Cattle	$ 42,431
Crops	77,247
Hay	2,336
Machinery work	167
Patronage dividends	2,076
Retained by co-op	251
Ag program payments (2 years)	30,749
Materials, services	1,444
Gas tax refund, credit	443
Miscellaneous income	2,232
Refunds	150
TOTAL	$159,526
Income	$159,526
Expenses	−135,686
Net return to management and farm labor	$ 23,840

EXPENSES

Hired Labor	$ 816
Repairs, maintenance	9,372
Interest	13,841
Rent of farm, pasture	13,163
Feed purchased	4,549
Seeds	591
Fertilizers, chemicals	8,708
Machine hire	3,533
Vet fees	596
Gasoline, fuel	7,155
Storage, warehouse	31
Taxes	4,061
Insurance	1,301
Utilities	1,372
Conservation expenses	1,444
Farm share of auto	297
Gov't payment refunded	1,564
Fees, publications	894
CCC loans repurchased	26,932
Reimbursements	8,668
Hedging	3,200
Herbicides	502
	112,590
Depreciation of machinery	23,096
TOTAL	$135,686

IF THE PRICE OF WHEAT GOES UP . . .

If the price a farmer gets for wheat goes up $1, say from $3.75 a bushel to $4.75, that would translate into a 1.2-cent increase in the price of a 1 pound loaf of bread. That's because 92.4 percent of the cost of a loaf of bread is based on something besides wheat, such as baking the bread and distributing it to the stores. Those two factors alone account for 73.2 percent of the cost of a loaf of bread.

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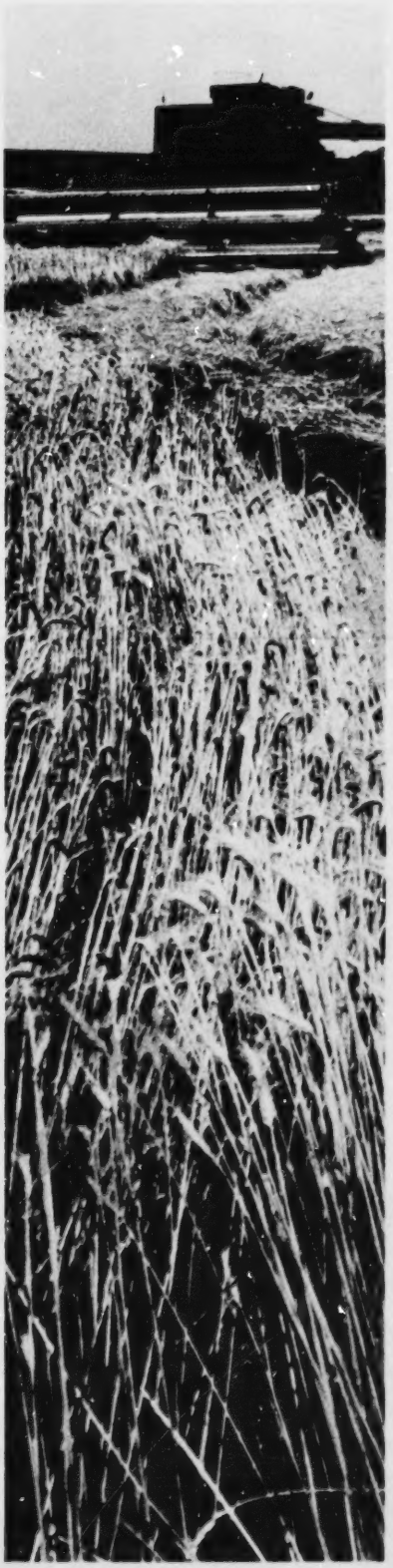
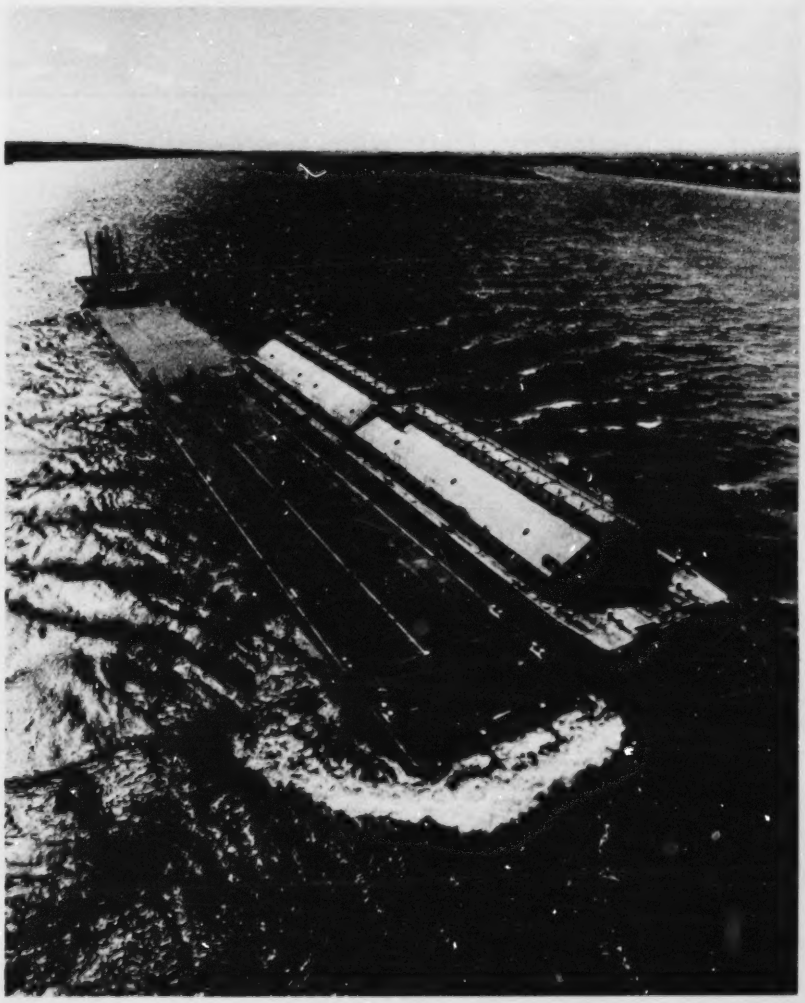
Quite often, Clara Mae Riffel, at left, brings both lunch and dinner out to the harvest scene. This time, Don and Steve Riffel were the recipients. Out in the field, Clara Mae finds, the harvesters are so hot and tired they "really don't do justice" to the meals she brings them. They're just not that hungry.



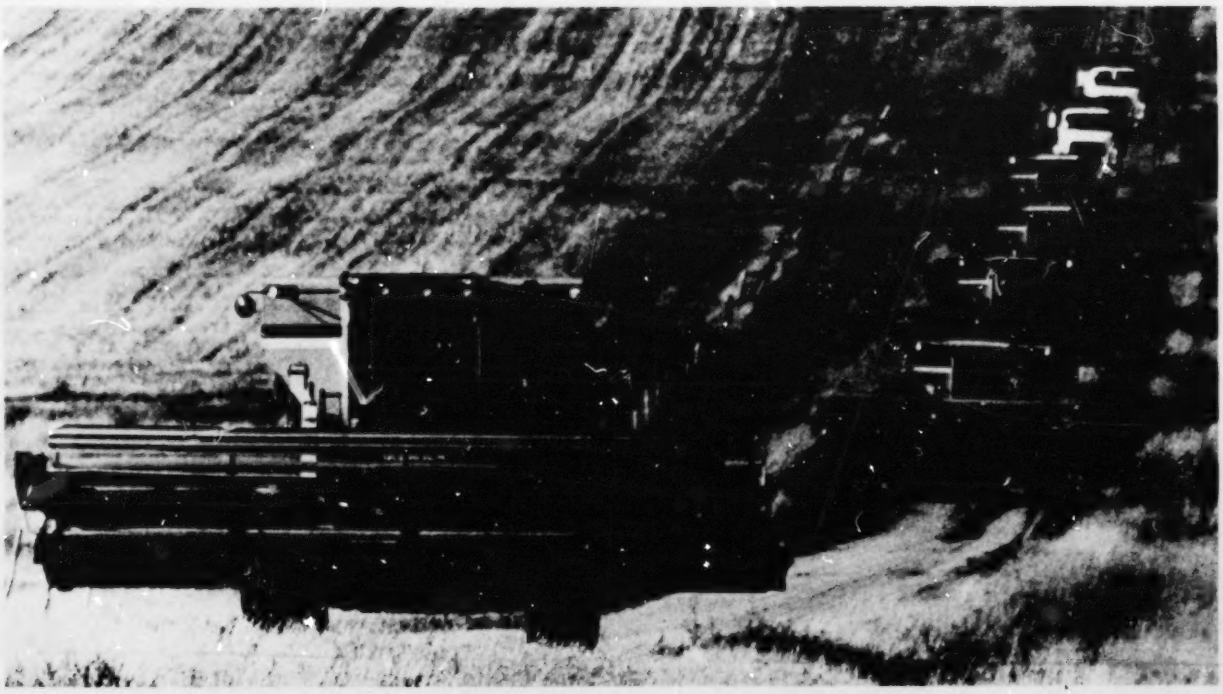
It took the Riffels twice as long to harvest their wheat in 1979 as in a normal year. The seasons were later than usual and the wheat didn't mature as quickly. But the yield per acre was far above average. Don Riffel, above, also found the grain of higher quality.

Oregon's White Wheat Popular Overseas

In April, Stan Timmermann of Pendleton, Oregon, examined a variety of soft white wheat, right, that he planted Oct. 1. A semi-dwarf variety, it would be only 30 inches high when mature. But it provided a record crop in 1980. Below, within sight of the Blue Mountains near Pendleton, one of Timmermann's tractors pulled plows through the previous year's stubble to prepare for next year's crop.



Three out of every four bushels of white wheat grown in the United States are exported. The Columbia River, which separates much of Oregon from Washington, carries a lot of that traffic. Empty barges at right are returned for filling, as above. The flat-topped barges carry fuel.



Costing $65,000 apiece in 1979, these six combines of Buster Finneman were traded in 1980 for six new ones. Buster wants to minimize time lost in over-hauling machinery. His custom harvesting business helps balance the financial ups and downs of his own farming operation. The money he might make cutting a good wheat crop in Oklahoma could counteract a bad crop year in North Dakota.

THE MAN FROM NORTH DAKOTA

When Buster Finneman finishes harvesting 18,000 tons of wheat for other people each year, he starts harvesting another 5,000 tons for himself.

Together, that amount of wheat would make 55 million 1-pound loaves of bread, if all of it were used only for making bread, which it isn't.

Buster is one of about 2,200 custom harvesters who hit the road every summer to harvest wheat in the Great Plains from Texas to the Canadian border. Often called "wheaties," they harvested fully a third of this Nation's wheat crop of 2.1 billion bushels in 1979. Buster has been traveling that trail since World War II, when the patriotic thing to do was to join the Harvest Brigade "down south" and cut your way north. Besides, that was the only way you could buy a combine in those days.

Buster lives in North Dakota just west of the Badlands, next to Montana. He farms thousands of acres on both sides of the State line. Early in June, he sends his sons, Dave, 24, and Steve, 21, along with a field boss, six combine operators, a cook, nine trucks, three trailers, and six brand new combines south to Vernon, Texas, to start harvesting wheat. That's where Buster's first customer grows wheat. He is part of a chain of more than 60 farmers Buster helps.

The farmers who employ Buster—nearly the same every year—may have from 100 to 2,000 acres of wheat to cut, generally closer to 2,000. Usually, Buster has all six combines operating at one time on a single farm.

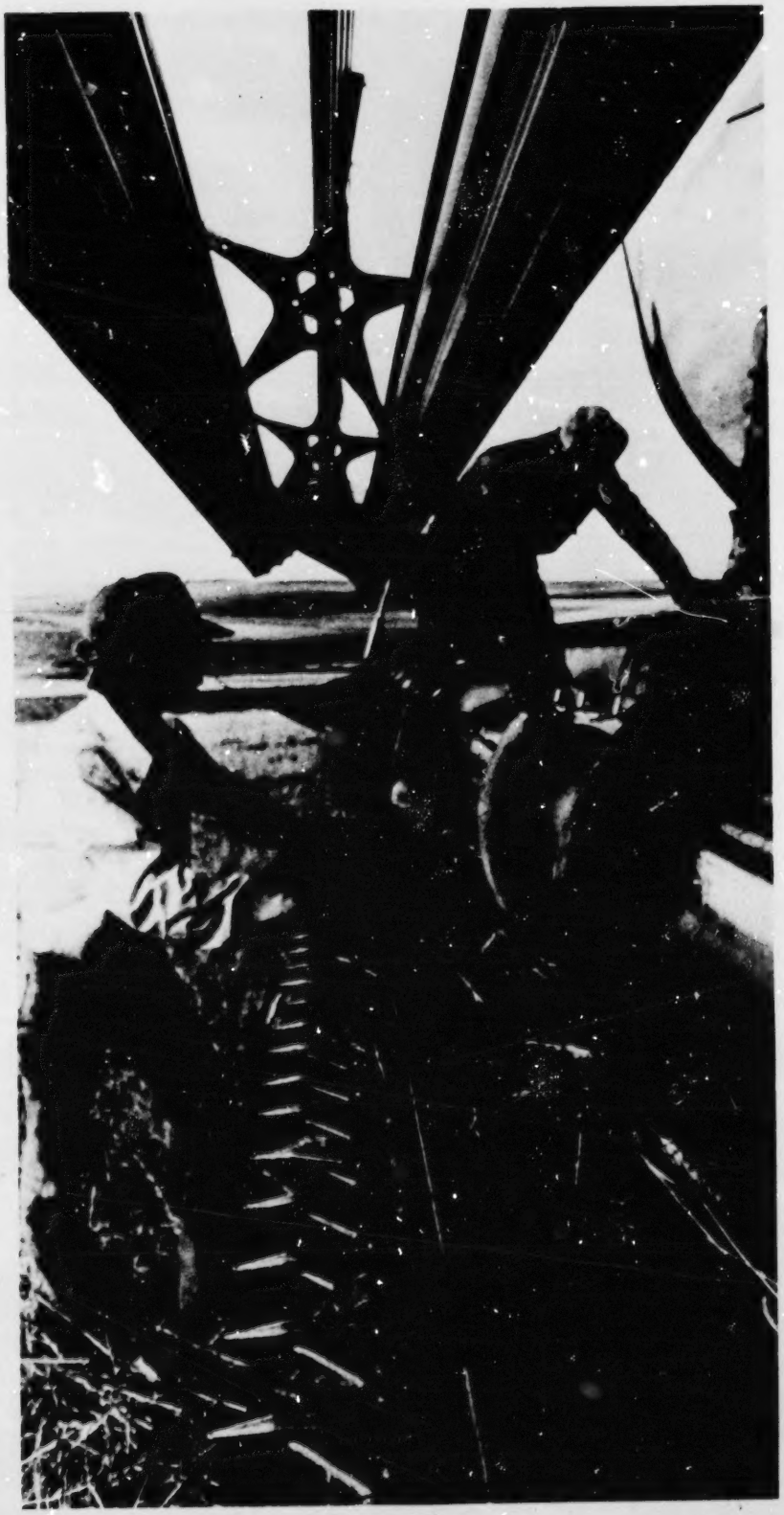
The crew works out of two trailers. The cook, Hazel Wilkins, and her husband, Pete, the field boss, live, cook and serve meals in the other. The trailers are hauled behind three of the trucks. The headers—the reel-type cutting ends of the combines—are disconnected from the combines after each cutting and hauled on the trucks. Then the six headless combines are driven along at highway speeds.

The crews arrive back in North Dakota late in August.

With the constant assistance of his wife Florence, Buster keeps control over his various enterprises with a leased telephone line, many two-way radios, and two airplanes. Although he buys six new combines every year—in 1979 they cost $65,000 each—something always goes wrong with the machines so Buster stays busy just flying in replacement parts. But he's also busy finding those few harvesting jobs necessary to fill in spots not contracted before the crew left North Dakota.

Working their way north through Oklahoma, Kansas, Colorado, Nebraska, South Dakota, Montana, and North Dakota, the crew starts each day about 6 o'clock, first preparing the machine for work and then starting to harvest as soon as the dew dries off about 9 a.m. They keep at it until the dew falls again, making the wheat difficult to combine. Quitting time can be as late as midnight.

Buster Finneman, left and below with one of his two airplanes, makes only verbal agreements and none has been broken in 32 years. That's Buster's farmstead and machinery buildings in the background.



At left, Ricky Finneman, nephew of Buster, and Larry Halderson repaired a combine.
Below, Dave Finneman, Buster's son, examined condition of a wheat field. At right, Ricky's son Stephen was dwarfed by the machine his father drove.

On a good day, a combine operator can harvest 100 acres. Buster likes to use the operators efficiently. If a farmer calls and says he thinks his wheat is ready to cut, Buster either drives or flies to the farm to verify the wheat is ready, then dispatches two combines ahead to start on the new field while four operators remain to clean up the other.

Buster charges the farmers "according to the crop." In the South, where Buster said they had a good harvest in 1979, he charged $12 an acre, plus 12 cents a bushel for every bushel a field yielded over 20 bushels to the acre. He also charged 12 cents a mile for the first 5 miles that his crew hauled the grain. Beyond 5 miles, the hauling charge was negotiable.

Buster's men harvest every day of the week unless it rains, when they don't get paid. The operators make $700 to $900 a month, plus room and board—some of them $1,000 a month counting bonuses. Besides wages, Buster pays social security and workers compensation insurance for the crew. Most of them worked 6 months and took a half year off until Buster started a new business in 1979—selling and applying anhydrous ammonia (which provides nitrogen) to the soil. Now the operators take only 2 or 3 months off in the winter. They start working at the fertilizer application early in the spring.

Buster grossed $350,000 on the custom harvesting part of his growing agriculture business in 1978, but after expenses of $263,000 he netted $87,000.

"When I first started, I charged $3 an acre," Buster recalls, "But that was when liquid petroleum fuel cost 8 cents a gallon. Now the price of parts, labor, and fuel is killing us. Diesel fuel costs 79 cents a gallon." And Buster uses diesel fuel at the rate of 1,500 gallons a day.

The turnover among Buster's operators is two or three a year. Replacements come from as far away as Arkansas. Some of them have to be trained.

A good operator, Buster says, has to know a lot about combines. He must know how a motor sounds when it's operating right. He must know how high the wheat should be cut (it depends on the length of the straw). He must know that the fan which blows straw out the back of the combine can also blow a lot of grain away if he isn't careful. (Some farmers have been known to walk behind the combines for awhile to check on this.)

After the wheat harvest in North Dakota, Buster's crew returns to Kansas to help harvest the corn and sorghum crops until Thanksgiving Day. Then they return to North Dakota for the harvest of sunflowers and irrigated corn.

After Christmas, finally, Buster and Florence, his wife of 36 years, take a couple weeks' vacation in a warm climate.

THE DUST BOWL

Don Riffel grew up a little bit east of the Dust Bowl of the 1930's but he remembers those days very well.

By loosest definition, the Dust Bowl covered the western part of the Great Plains from Texas to Canada. By strictest definition, it included only 20 counties concentrated in southeast Colorado, the panhandle of Oklahoma, the panhandle of Texas, and southwestern Kansas.

By any definition it was a disaster area, both for the land and the people who tried to make it produce food.

Plowed, cultivated, pulverized clayey soils of the Great Plains provided the "dust" of the Dust Bowl, the raw material of the dust storms which swirled 3 miles into the sky above the Bowl, maybe higher, and then drifted 1,500 miles east to darken the skies of Washington, D.C. Dust storms even reached the Atlantic Ocean.

Meanwhile, on the ground, wind pushed plowed sandy soil along the ground, slicing off the stems of, or burying, young wheat plants struggling to live through the drought in neighboring fields. Fields lost from 2 inches to a foot of topsoil in the winds. Millions of acres were severely damaged.

"We'd get off school early because clouds of dust would start rolling up from Colorado and southwestern Kansas in the daytime, turning it to dusk," Don Riffel recalls. "The clouds looked like a big black thunderstorm. We'd turn the kerosene lamps on at 3 o'clock in the afternoon, it was so dark.

"We'd almost suffocate from the dust. We had to stuff clothes around the doors and windows and hang a wet blanket over the door. I can understand how someone trapped in a house in a dust storm could go crazy."

The disaster of the Dust Bowl lasted 7 years in its southern range and 5 years in the north.

That was not the first time since the deaths of the grasses, the buffaloes, and the Indians that disaster had struck the western Great Plains. Nature had issued many ominous warnings.

There have been droughts on the Great Plains for as long as people can remember—some worse than others. Minor droughts arrive about every 10 or 11 years, major droughts, every second decade. Maps of the first half of the 1800's show the Dust Bowl of the 1930's was called even then The Great American Desert. Yet, earlier explorers described the Great Plains as a vast sea of grass. Somehow, Indians, buffaloes, and the natural grasses survived those early droughts.

The first settlers of the Great Plains from the East (300 years after the Spanish explorers had passed through) arrived during a rainy cycle after the Civil War. If the average rainfall on the western half of the Great Plains is 12 to 14 inches a year, that means some years will have 23 inches and others only 9. After the Civil War, the homesteaders arrived on the high (23 inches) side of the scale and started plowing up the grass to plant crops.

But the inevitable dry years came and the homesteaders' crops withered in the heat and died. Many farm families starved. Newly built towns died. Millions of acres were abandoned.

Beef cattle could handle the climate cycles better than wheat but their owners overextended, too. From the 1860's to the 1880's, the price for beef back East grew so strongly that cattle producers turned the plains into a giant cattle grazing operation. Even though the rains returned from 1875 to 1880, the grass couldn't grow as fast as it was being grazed. So the taller, more stable grasses died. Fortunately, the shorter grasses survived.

Dry spell followed wet spell in the Great Plains through the 1800's and early 1900's, with many farmers continuing to gamble against the droughts and losing.

By lucky coincidence, when worldwide demand for wheat in World War I drove grain prices up, there was plenty of rain to grow the crop. Farmers broke out millions of acres of grassland, much of it unsuited for cultivation. They enlarged their holdings and brought the expensive machinery needed to work them.

Then, after the war, the bottom fell out of the wheat market. Prices collapsed. And the Great Plains farmers were stuck with huge debts to pay off.

Their reaction was to plant even more land to wheat to find the money to pay off their debts. But they created an even greater surplus and prices continued to skid.

By 1931, when the drought which precipitated the Dust Bowl began, 5 to 6 million acres of fragile, unprotected soils were under cultivation in the Great Plains. A disaster was just a matter of time.

A farmer in the Great Plains needs both favorable markets and good weather to succeed. As the 1930's began, he had neither. Wheat prices plummeted to 30 cents a bushel, then to 17 cents (compared with an average price of $2.82 in 1978). Thousands of families lost their farms. Thousands more who had survived the disaster of low prices lost their crops in succeeding years to the ever-deepening drought and improper farming methods. Broken and poverty-stricken, they fled the Dust Bowl. Thirty million acres of Dust Bowl land went into public ownership for nonpayment of taxes. As the owners left, so did any attempt at soil conservation.

As a final blow, a plague of grasshoppers descended on the Plains, devouring much of the wheat which had somehow lived

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through the drought.

The winds etched the Dust Bowl, but, they didn't work alone. Their partners were overgrazing, drought, low wheat prices, tillage of unsuitable land, poor farming methods, and grasshoppers.

Could it happen again?

In the opinion of most conservationists, the answer is no. Drought will come again to the Plains but not a Dust Bowl.

Since the drought of the thirties and a worse drought in the fifties, there have been many important changes in the way the Great Plains farmers and ranchers treat their soil.

The Soil Conservation Service of the U.S. Department of Agriculture cautions Great Plains farmers: If it appears that we are entering another drought cycle, prepare for the worst. Keep your land covered with vegetation at all times. Consider chemical weed control to reduce tillage operations. Use stubble mulching equipment that leaves most of the crop residue on the soil surface. Encourage your neighbors to practice conservation.

Drought ruined the spring wheat of Edmund Kukowski near Beach, North Dakota, in 1980. So the disappointed farmer plowed under 2,000 acres in August, hoping there would be enough rain to help him plant a crop of some kind in the fall to keep the soil from blowing away. He decided to till to control weeds.

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CLASSES OF WHEAT

There are five major classes of wheat grown in the United States: Hard Red Winter, Hard Red Spring, Soft Red Winter, Durum, and White. Each has its favorite place to grow and each has its own best use in foodmaking.

Hard Red Winter. Nearly half the wheat produced in the United States is Hard Red Wheat which is planted in the late summer or fall, survives the winter, and is harvested primarily in June (in the South) and July (in the North). This is a descendant of the Turkey red wheat brought to Kansas in the 1870's by German Mennonites from the Crimea in Russia. It became popular because it could withstand dry and cold weather. Hard Red Winter wheat's grain is hard and contains a medium-to-high percentage of protein, which makes the dough from its flour better able to withstand tough mechanical kneading. This class of wheat is used almost exclusively for breadmaking. The gluten which develops from the grain's protein traps and holds air in bread. Hard Red Winter wheat is grown primarily in Kansas, Nebraska, Oklahoma, and Texas.

Hard Red Spring. This wheat is planted in the spring because winters in the Northern States are so severe they generally kill wheat plants started in the fall. Hard Red Spring wheat is grown in the States of Minnesota, Montana, North Dakota, and South Dakota. It is usually harvested in July, August, and early September. Its primary use is to blend with winter wheat to make bread.

Soft Red Winter. The grain of this kind of wheat is softer and the protein content lower. It is planted in the fall, primarily in Illinois, Indiana, Ohio, and Missouri. It is harvested from May in the South through July in the North. Its flour is used primarily for pastries, crackers, biscuits, and cakes.

Durum. This is a class of high protein wheat planted in the spring, primarily in Minnesota, Montana, North Dakota, and South Dakota. It is harvested in late July, August, and September. Durum is the "macaroni wheat." It is generally processed into semolina, a coarse granulation of the interior of the grain, which is then used to produce macaroni, spaghetti, and other pasta products.

White. This kind of wheat is used in the same ways as Soft Red Winter—for bakery products other than bread. It is grown principally in the Pacific Northwest but also in California, Michigan, Wisconsin, and New York. There are both hard and soft varieties. Some are planted in the fall, some in the spring. The grain contains relatively low percentages of protein. Flour of White wheat is used for making noodles (especially in the Orient), cakes, crackers, pie crust, doughnuts, and certain cakes.

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WHEAT AND THE GOVERNMENT

Government is involved in many ways in the growing of wheat. There is Government-supported research aimed at increasing yields and fighting disease and insects. There are Government-paid extension workers telling farmers about the most recent research results. Government-sponsored sales efforts are conducted overseas to increase the amount of wheat exported. And there are a variety of Government support programs for wheat growers.

Government programs to support farm income can be traced back to 1929. They have been continued over the years because they benefit both producers and consumers. Producers benefit from price and income supports, and consumers benefit from ample supplies of food at reasonable prices.

Farm programs lend stability to the farm sector by leveling out severe swings of high prices one year and low prices the next.

With the programs, the Government encourages production tailored to the marketplace, establishes adequate food reserves and helps develop foreign export markets—trade policies also affect wheat.

Farm programs change periodically. The programs discussed here were in effect in 1980. They may be changed in 1981 or subsequent years.

Farm programs do not guarantee a farmer a profit. It is not a welfare program—a farmer has to plant something and work very hard to grow it in order to benefit from the program.

In 1980, Government wheat programs consisted of:

(1) Price supports. Under this program, farmers can borrow money from the Government after they harvest their wheat. Later, they can sell it and repay the Government loan or they can continue to store it (see Farmer-Held Reserve, below). If the price of wheat is so low that farmers cannot repay all the loan, the Government will accept their wheat in full payment of the loan.

(2) Deficiency payments. These are cash payments made to farmers, based on how much wheat they harvest and what the average price of wheat has been on the open market during a specified period of time. The payment rate is the difference between the target price and the loan rate, whichever is smaller. Farmers who planted no more wheat in 1980 than they planted in 1979 got full target price protection. But those who planted more acreage were subject to a reduction in deficiency payments, depending on how much the nation's wheat farmers as a whole overplanted (if they did). The last year in which wheat deficiency payments were made was 1978.

(3) Farmer-Held Reserve. This is an extension of the price support loan over a period of 3 years. Farmers are paid to store their own wheat and are encouraged not to sell it until the market price is high enough. If the market price gets high enough, the Government asks farmers to repay their loans on the crop, so they will probably sell at least enough wheat to repay the loans. Basically, the idea is to stabilize prices and the supply of wheat.

(4) Export Help. The Government helps support price by buying wheat from U.S. farmers and then donating it to needy people overseas. Besides negotiating favorable treaties to promote the sale of wheat overseas, the Government also is involved in several market development activities.

The Government affects wheat farmers in many other ways. For instance, if wheat farmers also grow corn or grain sorghum, they may be eligible for another set of support programs for feed grains. The Government also offers special, cost-sharing grants and technical assistance in soil conservation.

Firm or product names used in this publication are solely for the purpose of providing specific information. Mention of these names does not constitute warranty of a product by the U.S. Department of Agriculture or an endorsement of it by the Department to the exclusion of other products.

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Prepared by Special Programs Center, Office of Governmental and Public Affairs, U.S. Department of Agriculture, Washington, D.C. 20250

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